



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁷ : C08J 9/00	A2	(11) International Publication Number: WO 00/47657 (43) International Publication Date: 17 August 2000 (17.08.00)
(21) International Application Number: PCT/US00/03682 (22) International Filing Date: 11 February 2000 (11.02.00) (30) Priority Data: 60/119,816 12 February 1999 (12.02.99) US (71) Applicant (for all designated States except US): THE DOW CHEMICAL COMPANY [US/US]; 2030 Dow Center, Mid- land, MI 48674 (US). (72) Inventors; and (75) Inventors/Applicants (for US only): FIBIGER, Richard, F. [US/US]; 3870 Johns Lane, Midland, MI 48642 (US). SUH, Kyung, W. [US/US]; 6204 Evergreen Court, Midland, MI 48642 (US). BARGER, Mark, A. [US/US]; 129 Helen Street, Midland, MI 48640 (US). SCHOMAKER, Joseph, A. [US/US]; 2280 South Duncan Road, Midland, MI 48640 (US). LIANG, Wenbin [CN/US]; 6319 Aspen Cove, Sug- arland, TX 77479 (US). MACKEY, George, A. [US/US]; 6007 Oak Hollow Court, Midland, MI 48640 (US). TUNG, Harvey, C. [US/US]; 684 Carriage Court, Newark, OH 43055 (US). (74) Agent: KORFHAGE, Glenn, H.; Intellectual Property, P.O. Box 1967, Midland, MI 48641-1967 (US).		(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>Without international search report and to be republished upon receipt of that report.</i>
(54) Title: NANOCOMPOSITE ARTICLES AND PROCESS FOR MAKING		
(57) Abstract An improved process for making a structural foamed polymer, a multilayer polymer film, sheet or tube, a pultrusion polymer profile, a compression molded extruded fiber reinforced polymer pre-form, a strand foamed polymer and a SCORIM formed polymer article. The improvement includes the step of dispersing a multi-layered silicate material with the polymer so that the polymer has dispersed therein single layers of silicate material, double layers of silicate material, triple layers of silicate material, four layers of silicate material, five layers of silicate material and more than five layers of silicate material, the volume percent of the one, two, three, four and five layers of silicate material greater than the volume percent of the more than five layers of silicate material. In each of the above embodiments an important benefit of the instant invention is the orientation of the plane of the layers of silicate material. Preferably, most of the layers of silicate material have substantially the same orientation within thirty degrees of angle. Such orientation improves the properties of the product and provides a practical way to make larger products. The amount of multi-layered silicate material used is preferably between one and twenty percent.		